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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,717	07/05/2007	Klaus Perthel	FRM-055US	6304
54/004 7590 05/27/2009 MUIRHEAD AND SATURNELLI, LLC 200 FRIBERG PARKWAY SUITE 1001 WESTBOROUGH, MA 01581				
EXAMINER				
TIETZEN, MARINA ANNETTE				
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3753				
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05/27/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/576,717

Applicant(s)

PERTHEL ET AL.

Examiner

MARINA TIETJEN

Art Unit

3753

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-18 and 21-25 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB08)
- Paper No(s)/Mail Date 10/09/2007.
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I in the reply filed on 4/13/2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. This office action is responsive to the amendment filed on 4/13/2009. As directed by the amendment: claims 4 has been amended, claims 19-20 have been cancelled, and new claims 24-25 have been added. Thus, claims 1-18 and 21-25 are presently pending in this application.

Information Disclosure Statement

3. The information disclosure statement filed 10/09/2007 is acknowledged by the Examiner.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the elastic layer (reference 7 in the description on page 12, line 27; claims 15 and 16) **must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.**

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "9" has been used to designate both a receiving space (pg. 13, line 4) and internal threads (pg. 13, line 4). Also, the reference character "28" has been used to designate both a bottom foot portion (pg. 14, line 4) and an armature (pg. 14, line 7). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1, 7, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. Claim 1 recites the limitation "and/or" in line 10. It is unclear whether the limitations following the phrase are part of the claimed invention.
9. Claim 7 recites the limitation "the at least one receiving space" in line 2. There is insufficient antecedent basis for this limitation in the claim.
10. Claim 22 recites the limitation "the polygon" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-4, 8, 10-11, 21, and 23-25 are rejected, as far as they are definite, under 35 U.S.C. 102(b) as being anticipated by Sakaguchi et al. (U.S. Pub. No. 2003/0066836).

Sakaguchi et al. disclose an electromagnetic valve (10, fig. 2) for a gas cylinder (6), comprising:

a valve body (11);

a threaded portion of the valve body (11b) with an external thread, which is screwable into an internal thread (5) on the gas cylinder (6);

a portion of the valve body (11) projecting into the gas cylinder (6);

a shut-off piston (22);

electromagnetic control elements (30) by which the shut-off piston (22) is movable from an open position to a closed position,

wherein the valve body (11) for receiving the shut-off piston (22) and the electromagnetic control elements (30) has a cavity (in which element 13 fits) which is disposed inside the threaded portion (5) and the portion of the valve body (11) projecting into the gas cylinder (6),

wherein a mouth (end which has threads 11c) of the cavity is disposed on a head end of the valve body (11) situated outside of the gas cylinder (6), and the shut-off piston (22) and the electromagnetic control elements (30) are be inserted into the cavity through the mouth (11c);

wherein disposed in a region of the mouth (end opening having threads 11c) of the cavity is an external thread (11c) into which a screw cap (portion 13b) is screwable;

wherein the valve body (11) has at least one further receiving space (not shown; indicated by alternate placement of safety valve 46 or fill valve 45 in valve body 11; para. 0038) for a further element (46, 45), and wherein the further element (46, 45) can be inserted into the receiving space through an opening situated outside of the gas cylinder (6);

wherein the at least one further element (45) is a connection coupling with a non-return valve.

wherein a flow restrictor (reduced diameter portion of passage 18 immediately after seat 26) is disposed on a mouth (reduced diameter opening defining mouth) into the interior of the gas cylinder (6);

wherein a protective device (cap plate 13b) against mechanical actions is provided on the head end of the valve body (11) situated outside of the gas cylinder (6);

wherein the protective device (13b) is a protective plate;

wherein the shut-off piston (22) is disposed in a substantially freely displaceable manner in the valve body (11); and

further comprising a pressure reduction channel (27) in the shut-off piston (22), wherein the pressure reduction channel (22) connects a rear (24) of the shut-off piston (22) facing the electromagnetic control elements (30) to a front (25) of the shut-off piston (22).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 18 is rejected, as far as it is definite, under 35 U.S.C. 102(b) as being anticipated by Sakaguchi et al. (U.S. Pub. No. 2003/0066836).

Sakaguchi et al. disclose the invention as essentially claimed, including wherein the valve comprises a safety element (46, fig. 1) which has an efflux opening situated outside of the gas cylinder (6). However, Sakaguchi et al. do not disclose a plurality of safety elements, and wherein all of the efflux openings are disposed on the valve body at a side remote from the passenger compartment.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a multiple amount of safety elements with efflux

openings for the purpose of providing backups in case of failures, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to locate the efflux openings on the valve body at a side remote from the passenger compartment for the purpose increasing safety by avoiding the expelled gas to be directed to passengers, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

16. Claims 1-11, 15-17, and 21-24 are rejected, as far as they are definite, under 35 U.S.C. 103(a) as being unpatentable over Wass (U.S. Pat. No. 5,458,151) in view of Sakaguchi et al. (U.S. Pub. No. 2003/0066836).

Wass discloses an electromagnetic valve (figs. 1, 6-8) for a gas cylinder, comprising:

- a valve body (302, 308);

- a threaded portion of the valve body (302, 308) with an external thread (on lower portion of valve body 302), which is screwable into an internal thread on the gas cylinder (10);

- a portion of the valve body (302, 308) projecting into the gas cylinder (10);

- a shut-off piston (same as piston 96, fig. 2);

- electromagnetic control elements (same as element 95, fig. 2) by which the shut-off piston (96) is movable from an open position to a closed position,

wherein the valve body (302, 308) for receiving the shut-off piston (96) and the electromagnetic control elements (95) has a cavity (314, as piston and elements are attached at threads 322) which is disposed inside the threaded portion and the portion of the valve body (302, 308) projecting into the gas cylinder (10),

wherein a mouth (356) of the cavity (314) is disposed on a head end of the valve body (308) situated outside of the gas cylinder (10);

wherein disposed in a region of the mouth of the cavity (314) is an external thread (358) into which a screw cap (310) is screwable;

wherein the valve body (302, 308) has at least one further receiving space (356) for a further element (306), and wherein the further element (306) can be inserted into the receiving space through an opening (opening with threads 312) situated outside of the gas cylinder (302, 308);

wherein the at least one further element is a manual shut-off valve (306);

wherein the valve body (302, 308) has at least one flow channel (316) connecting the cavity to at least one coupling piece (not shown, but a coupling piece is indicated by threads on 318) outside of the gas cylinder (10);

wherein the valve body (302, 308) comprises at least one flow channel (same as 106, fig. 2) connecting the cavity (314) to a mouth (opening of channel 106 that opens into gas cylinder) into the interior of the gas cylinder (10);

wherein the valve body (302, 308) comprises at least one flow channel (346) connecting the at least one receiving space (356) to a mouth (opening of channel 106 that opens into gas cylinder) into the interior of the gas cylinder (10);

wherein a flow restrictor (not shown; col. 4, lines 11-12) is disposed on the mouth into the interior of the gas cylinder (10);

wherein a filter (not shown; col. 4, lines 11-12) is disposed on a mouth into the interior of the gas cylinder (10);

wherein a protective device (310) against mechanical actions is provided on the head end of the valve body (302, 308) situated outside of the gas cylinder (10);

wherein the protective device (310) is a protective plate (head of cap 310 is hex shaped plate);

wherein an elastic layer (366) is disposed between the protective plate (head of cap 310) and the head end of the valve body (308);

wherein the head end of the valve body is (308) designed as a hexagon (shown in fig. 1).

wherein the shut-off piston (96) is disposed in a substantially freely displaceable manner in the valve body (302).

However, Wass does not disclose the shut-off piston and the electromagnetic control elements can be inserted into the cavity through the mouth of the cavity which is disposed on a head end of the valve body situated outside of the gas cylinder.

Sakaguchi et al. teach a shut-off piston (22) and electromagnetic control elements (30) inserted into a cavity through a mouth of the cavity which is disposed on a head end of a valve body portion (11) outside of a gas cylinder (6) for the purpose of providing a valve arrangement which is compact, provides protection to the valve elements, yet allows easy access to the valves for assembly or replacement of parts.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Wass's valve arrangement such that the shut-off piston and the electromagnetic control elements can be inserted into the cavity through the mouth of the cavity which is disposed on a head end of the valve body situated outside of the gas cylinder, as taught by Sakaguchi et al., for the purpose of providing a valve arrangement which is compact, provides protection to the valve elements, yet allows easy access to the valves for assembly or replacement of parts.

17. Claim 12 is rejected, as far as it is definite, under 35 U.S.C. 103(a) as being unpatentable over Wass (U.S. Pat. No. 5,458,151) in view of Sakaguchi et al. (U.S. Pub. No. 2003/0066836) further in view of Wass et al. (U.S. Pat. No. 6,260,570).

Wass discloses the invention as essentially claimed, except for wherein the head end of the valve body has rounded or chamfered edges.

Wass et al. teach a head end of a valve body having chamfered edges (fig. 1) for the purpose of removing sharp edges of a body being handled and thereby prevent cuts to a user's hand in a manner known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Wass's valve such that the head end of the valve body has rounded or chamfered edges, as suggested by Wass et al., for the purpose of removing sharp edges of a body being handled and thereby prevent cuts to a user's hand in a manner known in the art.

18. Claim 13 is rejected, as far as it is definite, under 35 U.S.C. 103(a) as being unpatentable over Wass (U.S. Pat. No. 5,458,151) in view of Sakaguchi et al. (U.S. Pat. No. 2003/0066836) further in view of Jolliff (U.S. Pat. No. 5,860,884).

Wass discloses the invention as essentially claimed, except for wherein the protective plate has at least one support rib.

Jolliff teaches a cover plate (14, fig. 1) having support ribs (24) for the purpose of strengthening the plate when under extreme force, in a manner known in the art and which yields predictable results.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Wass's valve such that the protective plate has at least one support rib, as taught by Jolliff, for the purpose of strengthening the plate when under extreme force, in a manner known in the art and which yields predictable results.

19. Claim 15 is rejected, as far as it is definite, under 35 U.S.C. 103(a) as being unpatentable over Wass (U.S. Pat. No. 5,458,151) in view of Sakaguchi et al. (U.S. Pat. No. 2003/0066836) further in view of Reder et al. (U.S. Pat. No. 6,328,347).

Wass discloses the invention as essentially claimed, however is silent on the material of the elastic layer, and therefore does not disclose the elastic layer is made of a thermoplastic polymer.

Reder et al. teach typical materials for an elastic layer such as an o-ring includes thermoplastic polymers.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Wass's valve, such that the o-ring is made of a thermoplastic polymer, as taught by Reder et al., using a material typically used for an o-ring seal.

20. Claim 18 is rejected, as far as it is definite, under 35 U.S.C. 103(a) as being unpatentable over Wass (U.S. Pat. No. 5,458,151) in view of Sakaguchi et al. (U.S. Pub. No. 2003/0066836) further in view of Visnic (U.S. Pat. No. 4,800,948).

Wass discloses the invention as essentially claimed, except for wherein the valve comprises a plurality of safety elements which have an efflux opening situated outside of the gas cylinder, and wherein all of the efflux openings are disposed on the valve body at a side remote from the passenger compartment.

Visnic teaches it is common in the art for pressurized containers to include safety elements (background section) having an efflux opening for the purpose of preventing catastrophic rupture in case of excessive temperature and/or pressure (col. 1, lines 14-16).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify Wass's valve to include a safety element which has an efflux opening situated outside of the gas cylinder, and a plurality of elements as desired for further safety, as taught by Visnic, for the purpose of preventing catastrophic rupture in case of excessive temperature and/or pressure, in a manner known in the art.

However, Visnic does not specify all of the efflux openings being disposed on the valve body at a side remote from the passenger compartment.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to locate the efflux openings on the valve body at a side remote from the passenger compartment for the purpose increasing safety by avoiding the expelled gas by the safety elements to be directed to passengers, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Allowable Subject Matter

21. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. No. 6,834,674 (Koschany et al.) discloses a gas cylinder with the valve elements which can be inserted from outside of the vessel. U.S. Pat. No. 6,321,779 (Miller et al.) discloses a common closure plate (fig. 8) used to close a cavity in a valve body inserted in a gas cylinder. U.S. Pat. No. 2,551,501 (Mitchell et al.) also discloses an equivalent closure plate (45).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARINA TIETJEN whose telephone number is (571) 270-5422. The examiner can normally be reached on Mon-Thurs, 9:30AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROBIN EVANS can be reached on (571) 272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. T./
Examiner, Art Unit 3753

/John K. Fristoe Jr./
Primary Examiner, Art Unit 3753